CLAIMS

What is claimed is:

1. A method comprising:

ionizing a sputtered material; and

applying a first and a second bias voltage to a first and a second region of a substrate of a micro-electromechanical system (MEMS) to form a first and a second layer of a first and a second film stack of a first and a second film bulk acoustic resonators filter of the MEMS for a first and a second frequency band respectively, the first and second layers having first and second desired thicknesses, and the first and second bias voltages being applied in accordance with at least the first and second desired thicknesses, respectively.

2. The method of claim 1, wherein said ionizing comprises ionizing atoms of the sputtered material.

3. The method of claim 1, wherein said ionizing comprises ionizing a sputtered material selected from the sputtered material group consisting of Mo and Al.

4. The method of claim 1, wherein said ionizing comprises ionizing a sputtered material in an ionized vapor deposition chamber.

5. The method of claim 1, wherein said ionizing of a sputtered material is performed as part of an ionized physical vapor deposition operation, and the

method further comprises performing other aspects of the ionized physical vapor deposition operation.

6. The method of claim 1, wherein said ionizing of a sputtered material is performed as part of a deposition operation, and the method further comprises performing other aspects of the deposition.

7. The method of claim 1, wherein said applying comprises applying the first and second bias voltages selected from the voltage group consisting of direct current voltages and radio frequency voltages.

8. The method of claim 1, wherein the first and second desired thicknesses are equal, and said applying comprises applying the first and second bias voltages at a corresponding equal level.

9. The method of claim 1, wherein the first and second desired thicknesses are unequal, and said applying comprises applying the first and second bias voltages at corresponding first and second unequal levels.

10. The method of claim 1, wherein

the applying of the first and second bias voltages are performed at a first point in time; and

the method further comprises applying a third and a fourth bias voltage to the first and second regions of the substrate at a second point in time, subsequent to the first point in time, to form a third and a fourth layer of the first and second film stacks, respectively, the third and fourth layers having third and fourth desired thicknesses, and disposed on top of the first and second layers

respectively, and the third and fourth bias voltages being dependently applied in accordance with at least the third and fourth desired thicknesses respectively.

11. The method of claim 10, wherein the method further comprises forming a fifth layer of the first film stack, at a third point in time, subsequent to the first and second points in time, the fifth layer having a fifth desired thicknesses and disposed on top of said third layer.

12. The method of claim 1, wherein the method further comprises forming a third layer of the first film stack, at a second point in time, subsequent to the first point in time, the third layer having a third desired thicknesses and disposed on top of said first layer.

13. A method comprising:

forming a first and a second layer of a first and a second film stack of a first and a second film bulk acoustic resonators filter for a first and a second frequency band, respectively, at a first point in time, for a micro-electromechanical system (MEMS), the first and second layers having a first and a second thicknesses respectively;

ionizing a sputtered material; and

applying a first and a second bias voltage to a first and a second region of a substrate of the MEMS to form a third and a fourth layer of the first and second film stacks, on top of the first and second layers, respectively, at a second point in time, subsequent to said first point in time, the third and fourth layers having third and fourth desired thicknesses, and the first and second bias voltages being applied in accordance with at least the first and second desired thicknesses.

14. The method of claim 13, wherein said ionizing comprises ionizing a sputtered material selected from the sputtered material group consisting of Mo and Al.

15. The method of claim 13, wherein said ionizing comprises ionizing a sputtered material in an ionized vapor deposition chamber.

16. The method of claim 13, wherein said ionizing of a sputtered material is performed as part of an ionized physical vapor deposition operation, and the method further comprises performing other aspects of the ionized physical vapor deposition operation.

17. The method of claim 13, wherein said ionizing of a sputtered material is performed as part of a deposition operation, and the method further comprises performing other aspects of the deposition.

18. A system comprising:

a deposition chamber;

a holder disposed inside the disposition chamber; and

a first and a second independent voltage source coupled to the holder, and adapted to be able to independently apply a first and a second voltage of a first and a second voltage level to a first and a second region of a substrate held by the holder.

19. The system of claim 18, wherein the deposition chamber comprises an ionized physical vapor deposition operation.

20. The system of claim 18, wherein the first and second bias voltages comprises voltage selected from the group consisting of first and second direct current voltages, and first and second radio frequency voltages.